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ABSTRACT

This chapter examines how adolescents' self-concept beliefs are powerfully influenced by frame of reference effects, which involve students' comparisons of their ability levels with those of other students in the immediate context as well as assessments of their own ability and academic accomplishments. Noting that academic self-concept is positively influenced by one's own academic accomplishments and negatively influenced by the ability levels of others in the immediate context, the chapter focuses on the "big fish-little pond" effect (BFLPE), providing an overview of research findings and directions that extend theoretical predictions based on the BFLPE and elaborating the implications of this research for school policies and practices. First, the chapter evaluates the effects of placement in specialized education settings for gifted students and educationally disadvantaged students. The results of these studies support BFLPE's theoretical prediction that educationally disadvantaged students have higher academic self-concepts in special education classes than in regular mixed-ability classes, whereas academically gifted students have higher academic self-concepts in regular, mixed-ability classes than specialized education settings for gifted students. Second, the chapter demonstrates the generalizability of the BFLPE by replicating this effect in two large-scale cross-cultural studies to provide further support for the external validity of the BFLPE. Last, the chapter examines Hong Kong students' self-concepts to test the effects of attending academically selective schools in the context of an Eastern collectivist culture, demonstrating that such attendance simultaneously results in a large negative contrast effect and a smaller positive assimilation effect. (Contains 82 references.) (KB)

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CHAPTER 4

THE PIVOTAL ROLE OF FRAMES OF REFERENCE IN ACADEMIC SELF-CONCEPT FORMATION: THE "BIG FISH–LITTLE POND" EFFECT

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The overarching aim of our research program is to address important societal issues by developing and promoting strategies to optimize self-concept as a valuable outcome and as a means to facilitate the attainment of other valued outcomes, along with a greater awareness of the worth of self in different social and cultural contexts. A positive self-concept is fundamental to all human endeavors, but is particularly relevant for adolescents in educational settings that are so pivotal in determining subsequent life directions and accomplishments. Self-concept in educational settings cannot be adequately understood if the role of frames of reference is ignored. Although academic self-concept is positively influenced by one's own academic accomplishments, the ability levels of others in the immediate context negatively influence it. This social comparison frame of reference has been identified in recent studies evaluating the big fish–little pond effect (BFLPE). The purpose of this chapter is to provide an overview of some exciting new research directions that extend theoretical predictions based on the BFLPE and elaborate the important implications of this research for policy and practice.

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First, we evaluate the effects of placement in specialized education settings for gifted students and educationally disadvantaged students. The results of these studies provide support for BFLPE theoretical predictions that (a) educationally disadvantaged students have higher academic self-concepts in special education classes than in regular mixed-ability (mainstreamed) classes, whereas (b) academically gifted students have higher academic self-concepts in regular, mixed-ability classes than specialized education settings for gifted students. These recent results have important educational implications that counter the presumed benefits of current educational policy and practice for special education students being enacted throughout the world.

Second, we demonstrate the generalizabiltiy of the BFLPE by replicating this effect in two large-scale cross-cultural studies to provide further support for the external validity of the BFLPE. In the first study we compare East and West German students' self-concepts at the start of the reunification of the German school system following the fall of the Berlin Wall. East and West German systems prior to reunification differed in that West German students attended schools largely based on their academic ability, whereas East German schools were based on mixed ability groupings, and the East German education system's ethos emphasized more competitive educational processes compared to the West German system. The results support the BFLPE theoretical predictions that the BFLPE is initially larger for the West Germans at the start of the first year after the reunification, and the self-concepts of former East German students were lower overall than those of the former West German students.

Finally, we examine Hong Kong students' self-concepts to test the effects of attending academically selective schools in the context of an Eastern collectivist culture. In Hong Kong, schools are more highly segregated in relation to ability than most countries in the world, but collectivist cultural values prevail that are posited to counter social comparison processes (compared to more individualistic values in most Western countries). We empirically demonstrate that attending academically selective schools simultaneously results in a large negative contrast effect (more demanding standards of social comparison lead to lower academic self-concepts) and a smaller positive assimilation effect (pride in being selected to participate in a high ability school leads to higher academic self-concepts).

SIGNIFICANCE OF SELF-CONCEPT

Nathaniel Branden (1994), an eminent philosopher and psychologist, attests to the significance of the self-concept/self-esteem construct and outcomes that are mediated by it, stating that:

> I cannot think of a single psychological problem—from anxiety to depression, to under-achievement at school or at work, to fear of intimacy, happiness or success, to alcohol or drug abuse, to spouse battering or child molestation, to co-dependency and sexual disorders, to passivity and chronic aimlessness, to suicide and crimes of violence—that is not traceable, at least in part, to the problem of deficient self-esteem. (p. xv)

As dramatically illustrated by Branden, self-concept research is highly relevant to important individual and societal problems that stem from low self-concept. At the heart of our research program is this universal importance and multidisciplinary appeal of self-concept as one of the most important constructs in the social sciences. This importance of self-concept and related constructs is highlighted by the regularity/consistency with which self-concept enhancement is identified as a major focus of concern in diverse settings, including education, child development, mental and physical health, social services, industry, and sports/exercise. Educational policy statements throughout the world list self-concept enhancement as a central goal of education. For example, in their model of effective schools, Brookover and Lezotte (1979) emphasized that maximizing academic self-concept, self-reliance, and academic achievement should be major outcome goals of schooling. Self-concept is also an important mediating factor that facilitates the attainment of other desirable psychological and behavioral outcomes. The need to think and feel positively about oneself, and the likely benefits of these positive cognitions on choice, planning, and subsequent accomplishments, transcend traditional disciplinary barriers and are central to goals in many social policy areas.

Self-concept is also one of the oldest, most important, most controversial, and most widely studied constructs in the social sciences. Despite this long history, advances in theory, research, and measurement of self-concept were slow, particularly during the heyday of behaviorism. It is only in the last three decades that there has been a resurgence in self-concept research. Even now, although many thousands of studies have examined self-concept, few researchers have published a significant number of studies or have conducted self-concept research over an extended period. In many studies, the major focus is on some other construct (e.g., academic achievement, school persistence, bullying, drug problems) and a measure of self-concept is included because of its assumed relevance. Reviews of this early research (e.g., Burns, 1979; Byrne, 1984; Shavelson, Hubner, & Stanton, 1976; Wells & Marwell, 1976; Wylie, 1974, 1979) emphasized weak theoretical bases, poor quality of measurement instruments, methodological shortcomings, and a lack of consistent findings. Similar observations led Hattie (1992) to describe this period as one of "dustbowl empiricism" in

which the predominant research design in self-concept studies was to "throw it in and see what happens."

In contrast, studies since the 1980s made important advances in theory, measurement, and research. Particularly in educational psychology, but in other disciplines as well, much of this progress is due to an exciting new interplay between theory, research, measurement, and practice. Building on the work of Shavelson and colleagues, Marsh, Shavelson, and colleagues developed and refined this important theoretical model of self-concept (Marsh, Byrne, & Shavelson, 1988; Marsh & Shavelson, 1985; Shavelson et al., 1976; Shavelson & Marsh, 1986; see also Marsh & Hattie, 1996) and developed a construct validity approach (see Marsh, 1990c, 1993). They argued that the determination of theoretically consistent and distinguishable domains of self-concept should be prerequisite to the study of how self-concept is related to other variables. Theory building and instrument construction are inexorably intertwined, such that each will suffer if the two are separated. Using the Shavelson and colleagues model as a "blueprint," Marsh developed the set of Self Description Questionnaire (SDQ) instruments for preadolescents (SDQI), adolescents (SDQII), and late adolescents and young adults (SDQIII). Subsequent reviews of this early research (Byrne, 1984; Hattie, 1992; Marsh, 1990c, 1993; Marsh & Shavelson, 1985) supported the multifaceted structure of self-concept and demonstrated that self-concept cannot be adequately understood if its multidimensionality is ignored.

Much of our early applied research was in educational settings (see Marsh, 1990c, 1993; Marsh & Craven, 1997), where our emphasis on the multidimensionality of self-concept was critically important. Whereas academic achievement, coursework selection, and persistence were systematically related to academic self-concept (e.g., Marsh, 1993; Marsh & Yeung, 1997a, 1997b), they were nearly uncorrelated (or even negatively related) to nonacademic (social and physical) self-concept responses. Hence, this research demonstrated the importance of considering the mulitidimensionality of self-concept and the critical relationship between academic self-concept and desirable educational outcomes. This research demonstrated that self-concept has an important influence on students—how they feel about themselves, their accomplishments, persistence, and educational decisions.

FRAME-OF-REFERENCE EFFECTS IN THE FORMATION OF ACADEMIC SELF-CONCEPT: THE BFLPE

Self-concept cannot be adequately understood if the role of frames of reference is ignored. The same objective characteristics and accomplishments

can lead to disparate self-concepts, depending on the frame of reference or standards of comparison that individuals use to evaluate themselves. Social comparison theory (Festinger, 1954) is one approach for studying frame-of-reference effects that has a long history in social psychology and provides the theoretical underpinning for this chapter. In an educational context, Marsh (1984a, 1984b; Marsh & Parker, 1984) proposed a frame of reference model called the big fish–little pond effect (BFLPE) to encapsulate frame-of-reference effects posited in social comparison theory. In the BFLPE, we propose that academic self-concept is influenced substantially by the ability levels of other students in the immediate context in addition to one's own ability and academic accomplishments. The purpose of this chapter is to review this research and summarize the results of recent research that expand the implications of the BFLPE.

In the theoretical model underlying the BFLPE (Marsh, 1984b), it is hypothesized that students compare their own academic ability with the academic abilities of their peers and use this social comparison impression as one basis for forming their own academic self-concept. A negative BFLPE occurs when equally able students have lower academic self-concepts when they compare themselves to more able students, and higher academic self-concepts when they compare themselves with less able students. For example, if average ability students attend a high-ability school (i.e., a school where the average ability level of other students is high) so that their academic abilities are below the average of other students in the school, it is predicted that this educational context will foster social comparison processes that will lead to academic self-concepts that are below average. Conversely, if these students attend a low-ability school, then their abilities would be above average in relation to other students in the school and social comparison processes will result in academic self-concepts that are above average. Thus, academic self-concepts depend not only on one's academic accomplishments but also on the accomplishments of those in the school that a student attends. According to this model, academic self-concept will be correlated positively with individual achievement (higher achieving children will have higher academic self-concepts). However, academic self-concept should be negatively related to school-average achievement (equally able students will have lower academic self-concepts in a school where the average ability is high and higher academic self-concepts in a school where the average ability is low).

The BFLPE is an example of external frame-of-reference effects that may impact upon students attending selective schools. Consider a capable student who has been evaluated as a top student throughout primary school. If the student is accepted into a selective high school, the student may be average or below average relative to other students in this school

rather than at the top of the class. This can have detrimental effects on the student's self-concept as the student is no longer a big fish in a small pond (top of the class) but is in a large pond full of even larger fish (average or below average in a high-ability school). Anecdotal support for these contentions comes from in-service programs conducted by the authors for teachers from selective schools. Teachers in these programs often report that new students in Year 7 (the first year of high school) experience emotional, motivational, and academic difficulties in adjusting to the high-ability environment of selective schools. School-initiated research also offers further support for the BFLPE. For example, a school counselor from a selective school, after hearing information such as presented in this chapter, conducted a simple survey in which students in Years 7 to 12 were asked to indicate how bright they were relative to other students in the state. He reported that, on average, students' self-perceptions of their academic ability declined about five percentage ranks for each year they had been in the selective high school.

Case study evidence also supports the underlying processes of the BFLPE (Marsh, 1991). A student named Jane was attending an academically selective Australian high school, but she was doing poorly and not attending school regularly. A change in employment forced her parents to move and Jane changed to a new high school that was not a selective school. Due to her poor progress at the last school, Jane was initially placed in a class with the least able students in the new school. It quickly became evident, however, that she was a very able student and she soon worked her way into the most advanced classes in the new school. Her parents found that she was taking school more seriously and spending more time on her homework. Jane indicated that at the old (selective) school, she had to work really hard to get just average marks, which was not worth the effort. However, if she worked hard in her new school, she could be one of the best, which was apparently worth the effort.

The historical, theoretical underpinnings of this research (see Marsh, 1974, 1984b, 1991, 1993; Marsh & Parker, 1984) derive from research in psychophysical judgment (e.g., Helson, 1964; Marsh, 1974; Parducci, 1995), social judgment (e.g., Morse & Gergen, 1970; Sherif & Sherif, 1969; Upshaw, 1969), sociology (Alwin & Otto, 1977; Hyman, 1942; Meyer, 1970), social comparison theory (e.g., Festinger, 1954; Suls, 1977), and the theory of relative deprivation (Davis, 1966; Stouffer, Suchman, DeVinney, Star, & Williams, 1949). Coming from a psychophysical tradition, we use the term "contrast" when the judgment of a target stimulus shifts away from the background or context, whereas we use the term "assimilation" when the judgment shifts toward the context (Marsh, 1974). In the BFLPE, contrast occurs when higher school-average achievement levels (the context) lead to lower individual student academic self-concepts (target judgment),

whereas assimilation occurs when higher school-average achievement leads to higher academic self-concepts (Marsh, 1984b). These terms are purely descriptive, but more "meaningful" terms are sometimes used to describe assimilation (e.g. reflected glory, labeling, and identification) and contrast (e.g., negative social comparison or negative BFLPE). This proliferation of terms creates some ambiguity in that social comparison processes can result in either contrast or assimilation, but the term "social comparison effects" is sometimes used to refer to only contrast effects. For purposes of this chapter, we treat BFLPE and social comparison as generic processes that can result in either (or both) contrast (negative social comparison) effects or assimilation (positive social comparison, reflected glory) effects.

Assimilation and Contrast Effects

Self-concept may be enhanced by membership in groups that are positively valued by an individual (Diener & Fujita, 1997; Tessor, 1988) through basking in the reflected glory of accomplishments or good qualities of other group members. Marsh (1984b, 1987, 1991, 1993; see also Felson, 1984) argued that it would be reasonable for students in academically selective classes to have improved academic self-concepts by virtue of being chosen to be in a highly selective educational program—an assimilation, reflected glory, or labeling effect (e.g., "If I am good enough to be selected to participate in this prestigious program with all these other very smart students, then I must be very smart"). Alternatively, if students use the other students in their academically selective class as a basis of comparison, then participation in academically selective classes should result in lowered academic self-concepts—a contrast or negative BFLPE effect (e.g., there are a lot of students better than I am so I must not be as good as I thought). Similarly, academically disadvantaged children in special classes with other academically disadvantaged students may have a lower academic self-concept than they would if they were in regular classes because they know that they are in a special class (labeling or assimilation effect). Alternatively, their academic self-concepts might be higher because they compare themselves with other students with similar academic accomplishments rather than students in regular classes who have higher academic accomplishments (contrast or negative BFLPE). Observed BFLPEs are likely to represent the counterbalancing, net effects of these two opposing processes. This implies that an assimilation (labeling, reflected glory) effect may be operating even though its effects are not so large as the contrast (negative BFLPE) effects, but little research has attempted to disentangle the two effects in BFLPE studies.

McFarland and Buehler (1995) specifically looked at the juxtaposition of the negative BFLPE and the positive reflected glory effects as a paradox, noting that there was surprisingly little work relating individuals' self-appraisals and perceptions of their groups. In a series of laboratory studies using feedback manipulations about individual and group performance, they found that people who feel more strongly about their group membership experience more positive affect when their group does well and more negative affect when their group does poorly. Following from cross-cultural research distinguishing between collectivist and individualist cultures that differ in the way they value social groups, McFarland and Buehler classified multicultural North American university students as coming from collectivist or individualist societies. They found that students from collectivist societies experienced significantly smaller negative BFLPEs than students from individualistic countries. They also noted an asymmetry such that individuals who value group membership can focus on their individual performances when they do well or on the performance of their group when they do poorly, thus allowing them to protect their self-concept. Based on their findings, they proposed a revision to the BFLPE metaphor: "Although everyone feels good about being a big fish in a little pond, not everyone feels bad about being a little fish in a big pond" (p. 1068).

Domain Specificity

Consistent with the growing recognition of the multidimensionality of self-concept and the need to distinguish between academic and nonacademic components of self-concept (Marsh et al., 1988; Marsh & Hattie, 1996), the BFLPE is very specific to academic self-concept. Marsh and Parker (1984; Marsh, 1987) showed that there were large negative BFLPEs for academic self-concept, but little or no BFLPEs on general self-concept or self-esteem. Marsh, Chessor, Craven, and Roche (1995) reported two studies of the effects of participation in gifted and talented programs on different components of self-concept over time and in relation to a matched comparison group. There was clear evidence for negative BFLPEs in that academic self-concept in the gifted and talented programs declined over time and in relation to the comparison group. These BFLPEs were consistently large for math, verbal, and academic self-concepts, but were small and largely nonsignificant for four nonacademic self-concepts and for general esteem. This domain specificity is illustrated even more dramatically in two studies (Marsh, 1990b, 1994) of the differential effects of school-average verbal and math achievement on math and verbal self-concepts.

DIFFERENTIAL EFFECTS OF SCHOOL-AVERAGE VERBAL AND MATH ACHIEVEMENTS: DOMAIN SPECIFICITY OF THE BFLPE

Marsh (1990c, 1994) tested the BFLPE model based on separate measures of math and verbal constructs. He began with separate analyses of the BFLPE for math self-concept (based on math achievement, school-average math achievement, and math self-concept) and corresponding model of verbal self-concept based on verbal constructs. When math constructs were considered, the effect of math achievement on math self-concept was substantial and positive (.46), whereas the effect of school-average mathematics ability was smaller and negative (–.14). Being mathematically able led to a higher math self-concept, but attending a high school where the other students are more mathematically able led to lower math self-concepts. A similar pattern of results was evident for the verbal self-concept model based on the effects of prior reading achievement and school-average reading achievement.

Marsh (1990c, 1994) then combined all the math and verbal constructs into a single BFLPE model. This model combined tests of the BFLPE considered separately for math and English self-concepts, but also provided a test of the internal/external (I/E) frame-of-reference model (see Marsh, 1986; Marsh et al., 1988). According to the I/E model, students use their relative accomplishments in their different school subjects as a basis for forming academic self-concepts in each school subject. Thus, for example, a student who is particularly good at mathematics will have a better math self-concept but a lower verbal self-concept. According to the I/E model, any variable that has a positive effect on math self-concept is likely to have a smaller, negative effect on verbal self-concept and vice versa.

Consistent with the BFLPE, the effects of school-average mathematics achievement on math self-concept were negative. A similar pattern of results is observed for English self-concept. What is new in this model was the content specificity of the BFLPE. School-average mathematics achievement had a negative effect on mathematics self-concept, but a smaller, positive effect on English self-concept. Conversely, school-average English achievement had a negative effect on English self-concept but a slight, positive effect on math self-concept. These results are certainly consistent with the content specificity of academic self-concepts that is an overarching principle of these studies.

It is interesting to note that school-average mathematics, despite its negative effect on math self-concept, had a slightly positive effect on English self-concept. That is, "If I attend a high school where the other students are mathematical geniuses, then my math self-concept will suffer but my verbal self-concept might be a little higher." The converse set of effects was observed for school-average verbal achievement. This finding is consistent

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with the general observation that a variable that positively affects mathematics self-concept tends to have a negative effect on verbal self-concept, and vice versa. This pattern of counterbalancing effects apparently reflects the internal comparison (ipsative) process embodied in the I/E model.

It should be noted that in the actual analyses, school-average achievements in verbal and mathematics were correlated highly. Because the school contexts in relation to these two subject areas were correlated highly, the amount of variance that could be explained by these differences was limited. For this reason, the results of this analysis might have greater theoretical significance than practical implications. This similarity in the mathematics and verbal contexts represents the natural state of affairs and it would be difficult to find schools where school-average mathematics achievement was high and school-average verbal achievement was low. If, however, this natural state of affairs was altered by specifically selecting students who were gifted mathematically without regard to their verbal abilities, for example, then the effects demonstrated here would have considerable practical significance. This is relevant, because selective high schools are increasingly specializing in particular areas of accomplishment (e.g., English, mathematics, science, performing arts).

EMPIRICAL SUPPORT FOR THE BFLPE

Empirical support for the BFLPE comes from numerous studies (e.g., Marsh, 1984a, 1984b, 1987, 1994; Marsh & Craven, 1994, 1997; Marsh & Parker, 1984) based on a variety of different experimental/analytical approaches. Marsh and Parker (1984) sampled sixth-grade classes from high and low SES areas in the same geographical area. The two samples differed substantially in terms of reading achievement and IQ scores. In path models of the relations among achievement, school-average ability and responses to the Self-Description Questionnaire—I (SDQI; Marsh, 1990d), the direct effect of school-average ability on academic self-concept was negative in models that controlled for individual achievement. In contrast, the effects of individual and school-average achievement were not statistically significant for nonacademic self-concept. Hence, the results provided an early demonstration of the BFLPE and its specificity to academic components of self-concept.

In an American study based on 87 high schools, Marsh (1987; see also Bachman & O'Malley, 1986) found that the effects of school-average ability on academic self-concept were negative, whereas the effects of school-average SES on academic self-concept were negligible. He also found that African American students, particularly those in segregated schools, did not differ substantially from Caucasian students in terms of academic self-con-

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cept even though there were substantial differences in terms of standardized achievement test scores. Whereas this pattern might suggest that the academic self-concept responses were "culturally biased," this is exactly the pattern predicted to occur in the BFLPE. African Americans had academic ability test scores that were below average, but—particularly in the segregated schools—compared themselves to classmates who also had below-average test scores. Thus, while their academic self-concepts were somewhat below average (due perhaps to self-perceptions that were independent of the immediate school context), they were not nearly as low as standardized achievement test scores would suggest.

The results of Marsh's (1987) analysis also clarified the distinction between academic ability and grade-point average (GPA), their respective influences on self-concept, and how this influenced the BFLPE. The 87 schools in the study differed substantially in terms of school-average academic ability, but not school-average GPA. Schools "graded on a curve" so that grade distributions were similar from one school to the next even though academic ability levels differed substantially. Hence, equally able students have lower GPAs in high-ability schools than in low-ability schools. Marsh demonstrated that this frame-of-reference effect influencing GPA was separate from, but contributed to, the BFLPE on academic self-concept. In further analysis of this same data, Marsh and Rowe (1996) replicated the finding using a multilevel modeling approach and demonstrated that the BFLPE generalized across all levels of initial ability level, including the very brightest students.

Sociologists studying school-context effects have found that school-average ability and particularly school-average SES are related to educational and occupational aspirations or attainments. In a review of this largely American literature, Alwin and Otto (1977) reported that school-average ability was negatively related to aspirations, whereas school-average SES tended to be positively associated with aspirations.

Rogers, Smith, and Coleman (1978) ranked a group of children in terms of academic achievement relative to their own classroom and academic achievement across the sample. They found that the within-classroom rankings were correlated more highly with self-concept than scores normed in relation to the entire sample.

Schwarzer, Jerusalem, and Lange (1983; see also Jerusalem, 1984) examined the self-concepts of West German students who moved from nonselective, heterogeneous primary schools to secondary schools that were streamed on the basis of academic achievement. At the transition point, students selected to enter the high-ability schools had substantially higher academic self-concepts than those entering the low-ability schools. However, by the end of the first year in the new schools, no differences in academic self-concepts for the two groups were present. Path analyses

indicated that the direct influence of school type on academic self-concept was negative. The most able students in the low-ability schools were less able but had much higher academic self-concepts than the least able children in the high-ability schools.

Most research into the BFLPE has examined between-school grouping practices in which students attend mixed-ability schools or academically segregated schools. An interesting extension of this research is to look at within-school ability grouping practices. In a meta-analysis of the effect of ability grouping on self-concept, Kulik (1985; see also Kulik & Kulik, 1982; Marsh, 1984a) compared children in streamed and unstreamed classes. Kulik and Kulik (1982) initially reported that self-concepts did not differ on average in schools with and without ability groupings. Marsh (1984a) countered that whereas the average self-concept (average across all the different ability groupings) might not differ as a function of streaming practices, he predicted ability streaming would result in lower self-concept for students in high-ability streams (compared to equally able students in unstreamed classes) and higher self-concepts for students in low-ability streams. In a followup analysis of the initial 1982 meta-analysis, Kulik (1985) confirmed Marsh's predictions based on the BFLPE, in that high-ability students tended to have lower self-concepts, and low-ability students higher self-concepts when placed in streamed classes.

Brookover (1989) examined frame-of-reference effects on academic self-concept from the perspective of the extent to which students in different schools were streamed according to ability. In schools with ability streaming, low-ability students tended to be placed in classes with other low-ability students and high-ability students tended to be placed in classes with other high-ability students. To the extent that students use other students within their class as a frame of reference, low-ability students in streamed classes should have higher academic self-concepts (because they compare themselves primarily to other low-ability students) than low-ability students in unstreamed classes. High-ability students in streamed classes, however, should have lower academic self-concepts (because they compare themselves primarily to other high-ability students) than high-ability students in unstreamed classes. Thus, streaming should tend to increase the academic self-concepts of low-ability students and decrease the academic self-concepts of high-ability students. Consistent with these predictions, Brookover found that the academic self-concepts were much less variable in schools that streamed their classes.

Ireson, Hallam, and Plewis (2001) pursued a somewhat different study of within-school grouping practices that provided a more direct extension of BFLPE predictions based on between-school grouping practices. They evaluated the effects of within-school streaming for English, mathematics, and science for Year 9 students (age 13–14) from 45 comprehensive high

schools. For English self-concept, the results were consistent with the BFLPE. The most able students in English had lower English self-concepts in schools with greater amounts of streaming, whereas the least able students in English had higher English self-concepts in schools with greater amounts of streaming. This follows in that the best English students in highly streamed schools attended classes with other students who were also very able in English. Hence, they tended to compare themselves with other students who were also very good English students, which resulted in a lower English self-concept. In contrast, the best English students in schools with no streaming attended classes with students who had a mixture of English abilities. Hence, they were more likely to be one of the top students in their (mixed-ability) English classes, which resulted in a higher English self-concept. Interestingly, the results of streaming in mathematics and science were not statistically significant. However, their results also indicated that variation in streaming practices was greater in English classes than science and particularly mathematics. For example, only 5 of 45 schools had mixed-ability mathematics classes in Year 9, whereas 20 or 45 schools had mixed-ability English classes. Because there was limited variation in streaming practices in mathematics, it is not surprising that this relatively weak streaming intervention had little effect. Hence, support for the BFLPE was strongest in the school subject (English) in which the streaming intervention was strongest.

Consistent with the BFLPE, Reuman (1989) found that within-school (between-class) ability grouping produced lower academic self-concepts for high-ability children and higher academic self-concepts for low-ability children. Reuman asked students if they would compare their test scores with those of a classmate and whether the selected classmate was perceived to be more or less able than they were. Consistent with the social comparison process, between-class ability grouping was associated with systematic differences in the perceived ability of the comparison classmate; high-ability children were more likely to select classmates with higher abilities than their own and low-ability children were more likely to select classmates with lower abilities than their own. These results support the role of social comparison processes in mediating the effects of ability grouping.

Zeidner and Schleyer (1999) tested the BFLPE in a large-scale study based on a nationally representative sample (N = 1020) of Israeli gifted students participating in either special homogenous classes for the gifted or mixed-ability classes. Path analyses indicated that gifted students in mixed-ability classes evidenced markedly higher academic self-concepts, lower anxiety, and higher school grades than gifted students in specialized classes.

Davis (1966) suggested a model similar to the BFLPE in a study of career decisions of American college students. Davis sought support for a theoretical explanation of why the academic quality of a college had so lit-

tle effect on career choice. Expanding the educational policy implications of his research, Davis concluded: "Counselors and parents might well consider the drawbacks as well as the advantages of sending a boy to a 'fine' college, if, when doing so, it is fairly certain that he will end up in the bottom ranks of his graduating class. The aphorism 'It is better to be a big frog in a small pond than a small frog in a big pond' is not perfect advice but it is not trivial" (p. 31). Such advice may also be relevant for evaluating the likely impact of attending academically selective high schools.

SO WHAT IF STUDENTS HAVE LOWER SELF-CONCEPT IN ACADEMICALLY SELECTIVE SCHOOLS?

The results of the BFLPE are very important for understanding the formation of academic self-concept and testing frame-of-reference models. However, classroom teachers, policymakers, and particularly parents might be prompted to ask, "So what?" What are the consequences of attending high-ability schools on other academic outcomes and how are these related to academic self-concept? In order to address these issues, Marsh (1991) considered the influence of school-average ability on a much wider array of outcomes and the role of academic self-concept and educational aspirations formed early in high school as mediators of the effects of school-average ability on subsequent outcomes. The High School and Beyond data were ideal for this purpose because the database is very large (1,000 randomly selected high schools and approximately 30 randomly selected students from each school), is nationally representative of the United States, and contains longitudinal data, consisting of responses by the same high school students when they were sophomores (T1), seniors (T2), and two years after normal graduation from high school (T3). The major components of the path analysis in this research were (a) individual-level and school-average measures of academic ability (a battery of standardized tests) and SES; (b) self-concept (academic and general), academic choice behavior (taking advanced coursework), academic effort (time spent on homework and class preparation), school grades (GPA), educational aspirations, and occupational aspirations measured at T1 and T2; and (c) college attendance, educational aspirations, and occupational aspirations at T3.

Although the path model including all these outcome variables was complicated, the results were easy to summarize. The effects of school-average ability were negative for almost all of the T1, T2, and T3 outcomes; 15 of the 17 relations were significantly negative and 2 were not statistically significant. Even though it might be argued that most of the important outcome variables in educational research were considered in this study, the effect of school-average ability was not positive for a single outcome.

School-average ability most negatively affected academic self-concept as in the BFLPE studies and educational aspirations as in the school-context studies. School-average ability also negatively affected general self-concept, coursework selection, school grades, standardized test scores, occupational aspirations, and subsequent college attendance.

Marsh (1991) also evaluated process variables that might mediate the subsequent negative effects of school-average ability. Controlling T1 academic self-concept and T1 educational aspirations substantially reduced the negative effects of school-average ability at T2 and T3. This supported their proposed role as mediating variables. Even after controlling all T1 outcomes, however, school-average ability negatively affected 7 of 11 outcomes at T2 and T3. This demonstrated that school-average ability continued to affect negatively T2 and T3 outcomes beyond its already substantial negative effects at T1. The largest of these negative effects was for T2 academic self-concept. When T2 academic self-concept was also controlled, the remaining school-average ability effects were less negative. This study demonstrated the importance of academic self-concept as both a proximal outcome and a mediating variable that facilitated the attainment of more distal outcomes.

In summary, equally able students attending higher-ability high schools were likely to select less-demanding coursework and to have lower academic self-concepts, lower GPAs, lower educational aspirations, and lower occupational aspirations in both their sophomore and senior years of high school. Attending higher-ability schools also negatively affected standardized test scores in the senior year of high school and subsequent college attendance, although these effects were smaller. For many senior year and post-secondary outcomes, there were statistically significant negative effects of school-average ability beyond those that could be explained in terms of sophomore outcomes. This implies that there were new, additional negative effects of school-average ability during the last two years of high school beyond the already substantial negative effects found early in high school. These results were consistent with previous research but were more compelling because of the High School and Beyond's large sample size, diversity of academic outcomes, and longitudinal nature.

It was important to evaluate the effect of school-average ability after controlling SES and academic ability. Whereas a disproportionate number of high-achieving students come from higher-ability schools, it was also apparent that a substantial proportion of students attending such schools were not achieving academic outcomes commensurate with their initial academic ability. Using an input–output analogy, the value added by higher-ability schools was negative compared to that of the lower-ability schools. Thus, the academic outcomes produced by higher-ability schools were not as good overall as would be expected on the basis of the quality of students

who attend these schools. It is also important, however, to emphasize that the sizes of these negative effects of school-average ability were typically small and represented an average across 1,000 high schools and many thousands of students. Hence, there will be some higher-ability schools that produce academic outcomes commensurate with the quality of their higher-ability students and some students who will be advantaged by attending such higher-ability schools. Nevertheless, it is unjustified to assume that higher-ability schools necessarily will advantage students. Attending higher-ability schools apparently disadvantages many students.

UNRAVELING EDUCATION ENIGMAS: NEW APPLICATIONS OF THE BFLPE FOR SPECIAL POPULATIONS OF ACADEMICALLY GIFTED AND DISADVANTAGED STUDENTS

Recent research expanding the scope and application of BFLPE theoretical predictions has begun to unravel some important, enduring issues in educational contexts. We now summarize some new developments of BFLPE research that greatly expands the scope of theoretical and practical implications. BFLPE studies have focused on the negative effects on academic self-concept of attending schools where the school-average ability level is high based on de facto segregation (e.g., the neighborhood where a student lives). In the theoretical basis underpinning the BFLPE, we emphasized that the observed effects are the net effects of two counterbalancing effects: contrast effects (negative social comparison effects or negative BFLPEs) and assimilation effects (labeling or reflected glory effects). However, BFLPE studies have not actually attempted to separate these two effects. This separation has important educational implications because critical policy decisions have been based on the assumption that labeling effects generated by specialized educational settings have important educational implications for students at both extremes of the special education spectrum. Based in part on a labeling theory rationale, special educators working in the gifted and talented (G&T) area (e.g., Gross, 1993) argue that very bright students will have higher self-concepts if they participate in full-time G&T classes. Labeling theory has had even more profound implications for academically disadvantaged students. Much of the theoretical rationale for the worldwide phenomena of mainstreaming these low-achieving students is that they will be forever labeled as slow learners if they are placed in special classes with other slow learners. However, both these claims imply that the net BFLPE is a positive assimilation effect rather than the negative contrast effects observed in earlier research. Such claims also run counter to a growing body of research evidence based on the theoretical underpinnings of the BFLPE described earlier.

Special Programs for Gifted and Talented (G&T) Students: The Big Fish Strikes Again

A major concern facing G&T researchers, policymakers, and practitioners is how best to educate G&T students. Debate has focused on whether full-time special programs best meet the needs of G&T students with educators supporting contradictory positions largely based on philosophical perspectives rather than theory and sound empirical research. Some educators advocate that special G&T programs best meet the needs of these students and therefore foster their full potential. These educators claim that grouping and segregating G&T students ensures academic achievement is maximized by an enriched intellectual environment and curriculum. Others are convinced that individualized instruction in the context of the regular classroom best meets the needs of G&T students.

In recent years Australia has experienced a substantial growth in the numbers of both G&T primary classes and secondary selective schools. This growth reflects strong parental interest in, and political support for, special educational settings for academically able students. Several early studies were undertaken by the NSW government to evaluate support for special educational provisions for G&T students. Sampson (1969) matched students in regular classes (who had declined offers to participate in specialized G&T classes) with students who participated in G&T classes in Years 5 and 6 (the last two years of primary school), on the basis of information collected in Year 4. He found that the two groups did not differ significantly in subsequent Commonwealth Secondary Scholarship Examinations scores, Higher School Certificate scores, or school persistence. However, regular-class students performed significantly better than G&T class students on the aggregate School Certificate in Year 10, although this difference occurred primarily with boys. In subsequent research, Sampson (1977) compared a random sample of 240 students from eight selective high schools and a comparison group of comprehensive high school students matched on the basis of gender, age, socioeconomic status, IQ, and prior achievement. He found that there were no statistically significant differences between selective and comprehensive high school students on subsequent school certificate scores, higher school certificate scores, or school retention rates. This result was consistent across initial ability levels and for boys and girls. This research contributed to a ministerial report recommending that selective schools should be phased out, but this recommendation was not enacted, due in part to parental pressure to maintain these schools. In both studies, Sampson emphasized that he was unable to consider affective variables (e.g., self-concept) that he suggested might be enhanced by attending selective schools.

Despite this early research providing no support for selective schooling in Australia, references to well-established research findings are often

absent from education policy rationales. The Commonwealth Schools Commission (1981, p. 47) seminar on the education of G&T students found that "the paucity of Australian research and the absence of any real attempt to harness and interpret overseas research . . . means that hypotheses are being stated and programmes are being developed within a data base vacuum." In part this was due to the dearth of educational research in Australia and elsewhere that systematically evaluates the different approaches to the education of G&T students, a problem identified a decade ago (e.g. Fox & Washington, 1985) and, more recently (e.g., Craven, Marsh, & Print, 2000; Goldring, 1990; Hoge & Renzulli, 1993; Marsh et al., 1995; Marsh & Craven, 1994, 1997), is still unresolved. Selective education settings are often assumed to enhance G&T students' self-concepts, yet research has typically not evaluated the impact of selective schools on psychological variables. Despite these weaknesses in current G&T research, "conventional wisdom" and some researchers assume that grouping G&T children together will enrich their education more fully than the regular classroom setting.

Gross (1992; see also Gross, 1993), in a study of profoundly gifted children, argued that "It might be anticipated that exceptionally gifted children who have been radically accelerated would score high on the index of academic self-esteem. By contrast, they display positive but modest scores, between the mean for their age groups and .7 of a standard deviation above . . . interestingly, it is the children who have not been radically accelerated whose academic self-esteem is unusually inflated" (p. 97). Although Gross argued that students in nonaccelerated settings have "inflated" academic self-concepts, her results support the BFLPE. Despite being 4 *SD*s above the mean IQ, radically accelerated children have "radically deflated" academic self-concepts that are only slightly above average because they compare their academic skills with those of their older, more able classmates. In contrast, the nonaccelerated children have realistically high academic self-concepts because they compare their abilities with those students from a normal range of abilities. Thus, radical acceleration is likely to produce substantial declines in academic self-concept that are consistent with the BFLPE. The implication of Gross's argument is that it is somehow bad for gifted children to have academic self-concepts commensurate with their high levels of academic achievement and good for them to experience a substantial decline in academic self-concept, but she provided no evidence in support of this implication.

In contrast to proponents of G&T classes and selective high schools, social comparison and BFLPE research (e.g., Coleman & Fults, 1985; Craven & Marsh, 1997; Hoge & Renzulli, 1993; Marsh, 1987, 1991, 1993; Marsh & Parker, 1984; Reuman, 1989; Rogers, 1979; Zeidner & Schleyer, 1999) supports predictions that participation in high ability selective classes or

schools leads to declines in academic self-concept. In order to pursue this issue more fully, Marsh and colleagues (1995; see also Craven, Marsh, & Print, 2000) designed two studies to test BFLPE predictions about the effects of participation in full-time G&T primary school classes over time and in relation to matched students attending mixed-ability classes. A major emphasis of their research was on the differential effects on academic and nonacademic self-concepts, and also on the effects of initial ability levels. In both studies, G&T students attending a G&T class were matched to students of equal ability who attended mixed-ability classes. In both Study 1 and Study 2, students in the G&T program experienced significant declines in three domains of academic self-concept over time and in relation to matched comparison students. In both studies this general pattern of results was reasonably consistent across gender, age, and initial ability. A critical feature of these studies was a multidimensional perspective of self-concept. Consistent with a priori predictions based on theory and previous research, participation in G&T programs had a negative effect on academic self-concept and no effect on nonacademic self-concept. This result is important, because most previous G&T research has been based on a unidimensional perspective of self-concept and relied on a single self-concept score that confounded differences between academic and nonacademic self-concept.

In Study 2, measures were collected from only two occasions. Whereas there was a decline in the academic self-concepts of the G&T students across these two occasions, there was no way to determine when the decline occurred. In Study 1, however, measures were collected on three occasions. Here the results showed that there were declines between the first two occasions, but there were new, additional declines between the last two occasions. Hence, the BFLPE was not a short-term adjustment effect but continued to grow larger over the first year in the G&T setting.

Taken together, the results above suggest that specialized educational settings for G&T students have an adverse impact on academic self-concept. This is problematic in that the attainment of a positive academic self-concept has been demonstrated in longitudinal panel studies (Marsh, 1990a; Marsh, Byrne, & Yeung, 1999) to have a causal impact on coursework selection, educational aspirations, and subsequent academic achievement. Marsh and Craven (1997), on the basis of a review of aspects of this research, noted that "short-term gains in achievement are unlikely to be maintained unless there are corresponding gains in academic self-concept" and concluded that "enhancing a child's academic self-concept is not only a desirable goal but is likely to result in improved academic achievement as well" (p. 155). These findings have important implications for educational policy in that placing G&T students in specialized educational settings may

be *counterproductive* if the goal of the educational program is to maximize academic self-concept and achievement.

Implications for Learning-Disabled (LD) and Mildly Intellectually Disabled (IM) Students.

The movement toward the inclusion of academically disadvantaged students in regular classrooms is also a contentious educational issue, which has generated much debate. Few topics in the field of special education elicit such a broad range of emotions and opinions. Labeling theory suggests that placing academically disadvantaged students in special classes with other low-achieving students will lead to lower self-concept and create a long-lasting stigmatization. On the basis of this theoretical argument, there has been widespread support for the practice of integrating academically disadvantaged students into regular classrooms (i.e., "mainstreaming"). In contrast, predictions based on BFLPE research contradict labeling theory in that academically disadvantaged students will have higher self-concepts when grouped with other academically disadvantaged students (compared to similarly disadvantaged students in regular classroom settings). In a review of relevant research, Marsh and Johnston (1993) reported that moving academically disadvantaged students from special classes into regular, mixed-ability classes was likely to result in lower academic self-concepts for academically disadvantaged students. This result is consistent with social comparison theory and the negative BFLPE in that the average ability level of students in the mixed-ability classes is higher than in special classes for academically disadvantaged students. Thus, academically disadvantaged students are likely to feel less academically able in comparison with nondisadvantaged students in regular classrooms than with other academically disadvantaged students in special classes. Burns's (1982) review of this literature also led him to conclude that placement of academically disadvantaged students in special schools resulted in an improvement in self-concept and that self-concept was positively related to the length of time academically disadvantaged students spent in special schools. He interpreted these results as favoring social comparison theory, but also noted that part of the problem may be that special schools do not prepare students for integration into mainstream society.

In a study of academically disadvantaged children, Strang, Smith, and Rogers (1978) tested the self-concepts of children who attended some classes with other disadvantaged children and other classes with nondisadvantaged children. Academically disadvantaged children were assigned randomly to experimental and control groups. Students in the experi-

mental group were given a treatment to enhance the saliency of their membership in the regular classrooms. This led to lower self-concepts for students in the experimental group than those in the randomly assigned control group.

Chapman (1988) conducted a meta-analysis of studies of learning-disabled (LD) children's self-concepts. Of particular relevance to this chapter was his comparison of LD students who were (a) completely segregated in special classes, (b) partially segregated for some work and partially integrated in regular classes with non-LD students, and (c) "unplaced" in completely integrated settings (i.e., LD students in regular classes who were not receiving LD remedial assistance). The inclusion of the unplaced classification is particularly important in that labeling theory predicts that these are the least likely to be stigmatized and, therefore, have the highest self-concepts. In contrast, BFLPE predicts that these children should have the lowest self-concepts. Whereas LD children in all three settings had poorer self-concepts than did non-LD children, the setting did make a difference, for general self-concept students in fully segregated and partially segregated settings did not differ from each other but had better self-concepts than did unplaced LD students in regular classrooms. For academic self-concept, fully segregated children had higher self-concepts than partially segregated students and both groups had substantially better self-concepts than unplaced LD students. The decrement associated with being an unplaced LD student in regular classrooms was substantially larger for academic self-concept than for general self-concept. These results support social comparison theory, but are complicated by the potential confounding between the type of setting and the amount of special assistance LD students received in the different settings. LD students apparently have substantially lower self-concepts than do non-LD students, and these deficits were particularly large for academic self-concept. These deficits, however, were substantially reduced if LD students were placed in fully segregated classes with other LD students. There was clear evidence that this strategy increased the academic self-concepts of LD students and there was no evidence to suggest that this strategy had any systematic effect on academic achievement. These results are important because they support social comparison theory and contradict predictions from labeling theory that has been used to argue against segregated classes.

Recent research by Tracey and Marsh (2000) involving children with mild intellectual disabilities (IM) is particularly relevant. They began with a measurement perspective. Historically, they argued, special educators have tended to treat self-concept as a unidimensional, global construct represented by a single score. Although much recent research argues against this perspective in normal populations, research in the special education area has not clearly supported the multidimensionality of self-concept for

students with learning disabilities. For example, in her review of self-concept instruments, Byrne (1996b; see also Byrne, 1996a) emphasized that "a search of the literature revealed such instrumentation to be disappointingly sparse and serves to highlight this critical void in the availability of self-concept measures for special populations" (p. 221). Tracey and Marsh, however, argued that this apparent failure to support the multidimensionality of self-concept in responses by academically disadvantaged children probably reflected a failure to develop appropriate multidimensional instruments and apply appropriate measurement procedures. In support of this contention, they cited research based on the individualized administration form of the Self Description Questionnaire—I (SDQI-IA; Marsh & Craven, 1997; Marsh, Craven, & Debus, 1998), which provides clear support for the multidimensionality of self-concept responses by children as young as 5 years of age.

Tracey and Marsh (2000) evaluated the individualized administration approach with the SDQI for a sample of 211 IM students enrolled in Grades 2–6. These students had previously been identified as having a mild intellectual disability (i.e., an IQ of 56 to 75 based on an individually administered test of intelligence and impairment in adaptive functioning). Confirmatory factor analysis clearly identified all eight factors that the SDQI was designed to measure and resulted in a good fit to the data. Reliability estimates for the eight factors were generally adequate (mean alpha of .85) for the total sample and for separate analyses of responses by younger and by older students. Importantly, this study was apparently the first to find support for reliable, multidimensional self-concept responses for this special population of students.

On the basis of the students' current educational placement, Tracey and Marsh (2000) compared two groups of IM students: Group 1 comprised 98 students who were enrolled full time in regular classes; Group 2 comprised 113 students who were enrolled full time in an IM support unit. Labeling theory predicts that students in regular classroom placements will have higher self-concepts. In contrast, social comparison theory and the BFLPE predicts that students in IM support units will have higher self-concepts and that these differences will be limited primarily to the three academic scales (math, verbal, and school self-concepts) of the SDQI. The results demonstrated that students in the two placement settings differed significantly on several dimensions of self-concept. Consistent with BFLPE predictions, students in special IM classes had significantly higher self-concepts for all three academic scales (reading, math, school). In addition, however, these IM students had significantly higher peer self-concepts and significantly higher general self-concepts. The two groups did not differ significantly for the remaining three nonacademic self-concepts (parents, physical ability, physical appearance). The results are clearly inconsistent

with predictions based on labeling theory. The results for the academic self-concept scales and, perhaps, the general self-concept scales are consistent with predictions based on BFLPE. The negative effects of inclusion on peer self-concept, although not predicted a priori on the basis of BFLPE research, are understandable. Despite the rhetoric of inclusion, it is apparent that IM children who were in regular classrooms not only suffered lower academic self-concepts but they also apparently felt excluded socially.

It should be noted that Tracey and Marsh's (2000) results are based upon a cross-sectional design in which two intact groups are directly compared. Although potential counterexplanations based on nonequivalent groups are always worrisome, the direction of such a bias is likely to run counter to predictions of social comparison theory. Hence, to the extent that there were preexisting differences between the two groups, IM students in regular classes were likely to be more academically competent than those in the IM support units. From this perspective, these results are likely to be conservative and underestimate the negative effects associated with placing IM students in regular classes.

In summary, current research supports the BFLPE and social comparison theory and contradicts the labeling theory upon which current special education philosophy is currently based. These results challenge special education policymakers and practitioners to recognize that inclusion of IM students in regular classrooms is likely to result in lower academic self-concepts. Hence, appropriate strategies are needed to counter this negative effect of inclusion rather than accepting the largely unsupported inference from labeling theory that the effects of inclusion on self-concept are positive.

CROSS-CULTURAL AND CROSS-NATIONAL COMPARISONS: TESTING THE GENERALIZABILITY OF THE BFLPE AND EXTENDING THE THEORY

Sue (1999), along with many others, argues that psychological research has not taken sufficient advantage of cross-cultural comparisons that allow researchers to test the external validity of their interpretations, as well as to gain insights about the applicability of their theories and models. Tests of the cross-cultural support for predictions from a theoretical model developed in one culture to another culture provide an important basis for testing this generalizability. Theoretical models posit the cognitive basis that students use to determine appropriate frames of reference in the formation of their academic self-concepts. Because such frame-of-reference effects might be specific to particular cultural settings, it is useful to test the generalizability of predictions based on one culture to different cultures.

Importantly, previous tests of the BFLPE have been conducted primarily in Western countries and, typically, in those where the native language is English. In this respect, the results of two recent investigations—based on large, representative samples of East and West German students (Marsh, Koeller, & Baumart, in press) and Hong Kong students (Marsh, Kong, & Hau, 2000)—represents an important test of the cross-cultural generalizability of predictions based on the BFLPE.

REUNIFICATION OF EAST AND WEST GERMAN SCHOOL SYSTEMS: A UNIQUE TEST OF THE BIG FISH-LITTLE POND EFFECT

In 1991 East and West German students experienced a remarkable social experiment in which the very different school systems of the former East Germany and West Germany were reunified. The Marsh, Koeller, and Baumart (in press) study is part of a large longitudinal project conducted by the Max Planck Institute for Human Development designed to evaluate the implications of the reunification of the two school systems. The former East German system differed from the former West German system and the newly reunified system in two ways that were particularly important to social comparison processes in the formation of academic self-concept.

First, the former East German students had explicitly not been grouped into schools or classes according to their achievement levels, whereas the former West German students had attended schools based largely on their achievement levels for the two years prior to the reunification. Hence, it was predicted that the BFLPE should be initially larger for the West Germans at the start of the first year after the reunification. This difference in the size of the BFLPE was also predicted to be much smaller by the end of the first school year following reunification.

Second, the former East German system placed considerably more emphasis on highly competitive, social comparison processes that are likely to undermine academic self-concept. Hence, the self-concepts of former East German students were predicted to be lower overall than those of the former West German students.

Description of the Study

The sample consisted of large representative samples of students (2,778 students, 161 classrooms) from the former East and West German education systems who completed surveys on three occasions in the first year after the reunification of the German school system following the fall of

the Berlin Wall. Three waves of math self-concept responses were collected at the start of 7th grade (T1, the first month of the newly reunified school system), at the middle of 7th grade (T2), and at the end of 7th grade (T3). A math achievement test derived from prior research was administered at T1. Statistical analyses consisted of multilevel models relating individual and classroom variables to self-concept. The researchers began by evaluating the effects of the major substantive constructs (individual student achievement, class-average achievement, and region (East versus West Germany) to academic self-concept separately at each occasion. Then they evaluated the effect of these variables on T2 self-concept controlling for T1 self-concept, and on T3 self-concept controlling for T1 and T2 self-concept, in order to evaluate how change in self-concept over time was related to the substantive constructs.

Results

The most basic test of the BFLPE consisted of an evaluation of the combined effects of individual achievement and class-average achievement on T1 math self-concept. Social comparison theory predicts that the effect of class-average achievement should be negative (i.e., the negative BFLPE). Individual student achievement based on the standardized mathematics test had a positive effect on math self-concept (standardized path coefficient of .34), whereas class-average math achievement had a negative effect on math self-concept (−.17).

Region (East versus West Germany) was a central variable in terms of evaluating the effects of this critical social experiment—the reunification of the two former school systems—on the formation of self-concept. Consistent with predictions based on school policies emphasizing social comparison and a unitary system in the former East German school system, East German T1 math self-concepts were significantly lower than those of West German students (−.11). Furthermore, also consistent with a priori predictions, there was a statistically significant interaction between region and class-average achievement; the BFLPE at the start of the first year after the reunification was more negative for West German students (who had already been tracked according to achievement in the previous two years) than for East German students (who were attending academically differentiated schools for the first time). Hence, there were both main and interaction effects associated with region. Overall, initial levels of self-concept were lower in East Germany (the main effect). However, the negative effect of class-average achievement on self-concept was smaller for East German students (the interaction effect). The BFLPE was also smaller for East German students at T1.

There was a substantively important change over time in the pattern of statistically significant effects. At T1 and, to a slightly lesser extent at T2, the negative effect of class-average achievement was more negative for West German than East German students. This is consistent with a priori predictions, because East Germans came from a system in which there was a strong policy against segregating students according to achievement levels, whereas for the previous two years the West Germans in this sample had attended schools that differed substantially in terms of school-average ability. In contrast to T1 and T2 but still consistent with a priori predictions, the region x class-average achievement interaction was not statistically significant at T3. By the end of the school year the frame of reference effects associated with the newly reunified school system overshadowed those associated with the former East German system, at least in terms of the BFLPE.

Discussion and Implications

History may view the reunification of East and West Germany as one of the most important social interventions in the 20th century, and these effects were particularly profound for the German education system. Based on these cultural differences in the two school systems, the authors predicted what differences in the formation of academic self-concept would exist at the onset of the intervention and how these differences would change over the first year of the reunification into a single system based primarily on the West German model. The results of this Marsh and colleagues (in press) study replicate a growing body of BFLPE research, conducted primarily in English-speaking countries, showing that academically selective educational programs have negative effects on academic self-concept. The results are also important in (a) providing strong support for the external validity of the BFLPE in a country where English is not the first language; (b) extending BFLPE research by showing how theoretical predictions vary consistently and logically in two groups (East and West German students) in a large-scale, quasi-experimental study; and (c) demonstrating how educational policy differences at the system level can impact on the academic self-concepts of individual students.

COUNTERBALANCING CONTRAST AND REFLECTED GLORY EFFECTS IN HONG KONG HIGH SCHOOLS: EXTENDING THE THEORETICAL PREDICTIONS OF THE BFLPE

Whereas previous BFLPE research has focused on negative contrast effects, as discussed previously, the BFLPE is hypothesized to be the net effect of two counterbalancing processes: (1) negative contrast effects that have been emphasized and (2) positive, reflected-glory, assimilation effects. Because the BFLPE is consistently negative, the negative contrast effect is apparently much stronger than the positive assimilation effect. Although reflected-glory assimilation effects have a clear theoretical basis, these effects have been implicit and have not been adequately operationalized in BFLPE studies.

To address this issue Marsh, Kong, and Hau (2000) conducted a four-year longitudinal study to evaluate the juxtaposition between assimilation and contrast effects for a large cohort of high schools in Hong Kong. On the one hand, this is the most highly achievement-segregated high school system in the world, which might be expected to lead to more negative contrast effects (i.e., the contextual differences are larger). On the other hand, because the Chinese culture is low on individualism and high on collectivism, Chinese students should be less susceptible to the negative contrast effects due to social comparison processes and should have a greater tendency to value their social group than those in individualistic settings. Consistent with this perspective, face—one's reputation—is of great concern in the Chinese culture and admission to a prestigious high school is highly valued in Hong Kong. Hence, the gain in status and face for oneself and one's family due to attending a prestigious high school (reflected glory, assimilation effect) may possibly overshadow the loss in academic self-concept due to negative contrast resulting from comparisons with high-achieving classmates. Also consistent with this potential deemphasis of social comparison processes, Hong Kong students attribute their examination results more to effort than to ability and concentrate more on their own improvement over time than on comparison with other students as determinants of perceived academic achievement. If Chinese students do value being members of academically selective schools (stronger assimilation effects) and their collective orientation reduces attention to social comparison processes (weaker contrast effects), the net BFLPE may be substantially less negative or close to zero.

Marsh et al. (2000) also incorporated several advantages over most previous BFLPE research in that it (a) specifically included a new measure of perceived school status to infer reflected glory; (b) used particularly good measures of pretest achievement collected prior to the start of high school

that were not confounded with true school effects; and (c) employed multilevel modeling that more appropriately disentangled effects due to individual students and schools than inappropriate multiple regression analyses used in most previous research.

Description of the Study

In Hong Kong, at the end of Grade 6, secondary school places for Grade 7 are allocated according to parental choice in the order of merit of students' internal school examination results moderated by public examination performance. Students are largely free to apply to any high school in Hong Kong. The large sample (7,997 students from 44 high schools) was broadly representative of Hong Kong schools. Measures considered in this study were pretest (T0Ach) achievement, standardized achievement tests administered at T1, T2, and T3 (T1Ach, T2Ach, T3Ach), academic self-concept collected at T2 and T3 (T2ASC, T3ASC), and a measure of perceived school status. The survey instrument administered at T2 and T3 (in Grades 8 and 9) included a Chinese translation of the SDQ-II, but for purposes of this investigation, only responses to the academic self-concept scale were considered. The survey materials also contained a School Status scale (e.g., "My school has a good reputation"; "The academic standard of my school is high, many students want to get in"). Statistical analysis consisted of multilevel modeling.

Results: Negative Effects of School-Average Achievement: The BFLPE

Prior to presentation of the multilevel analyses, Marsh et al. (2000) presented some preliminary results to explicate the BFLPE. Academic self-concept was positively correlated with achievement. When both individual and school-average (pretest) achievement were regressed on academic self-concept, the effect of individual achievement was positive (β = .34 for Grade 8, .39 for Grade 9), whereas the effect of school-average achievement was negative (β = –.20 for Grade 8, –.22 for Grade 9). Although comparisons of beta-weights from different studies should be made cautiously, the sizes of these negative effects were comparable to those found in nationally representative samples of U.S. students (e.g., –.21, Marsh, 1987; –.23, Marsh, 1991).

Marsh and colleagues (2000) then conducted a series of multilevel regression analyses in which different predictor variables were related to different outcome variables. The main findings were the juxtaposition of

the negative (contrast) effects of school-average ability on academic self-concept and the positive (assimilation, reflected glory) effects of school status on academic self-concept. The negative contrast effect was reflected in the negative effect of school average pretest achievement on academic self-concept after controlling at least individual pretest achievement (T0Ach). In the first set of models, the negative effect of school-average achievement on T2 academic self-concept varied from –.22 (when only T0Ach was controlled) to –.24 (when T0Ach, T1Ach, and T2Ach were controlled). This replicates the negative (contrast) effect found in many other BFLPE studies. Because academic self-concept was measured on two occasions, it was possible to evaluate the additional negative effects of school-average achievement at T3 beyond the negative effects at T2. These were models of self-concept change because the effects of T2 self-concept were partialled out of T3 self-concept. Not surprisingly, the largest effect on T3 self-concept was T2 academic self-concept, although individual academic achievement continued to have a positive effect. Of critical importance, the negative (contrast) effect of school-average achievement on T3 academic self-concept was still significantly negative even after controlling the negative effect of school-average achievement mediated by T2 self-concept. Hence, there were new, additional negative effects of school-average achievement on T3 academic self-concept beyond the negative effects at T2. In summary, the Marsh and colleagues findings provided clear support for the negative BFLPE in Hong Kong high schools. Not only were there negative BFLPEs for T2 and T3 academic self-concept considered separately, but the negative BFLPEs for T3 academic self-concept were larger than those that could be explained by the negative BFLPE already experienced at T2.

Results: Positive Effects of Perceived School Status—Reflected Glory, Assimilation Effects

In subsequent analyses, Marsh et al. (2000) modeled perceived school status as a function of prior achievement, academic self-concept, and school-average achievement. School-average achievement had very large, positive effects (.56 to .60). Perceived status was substantially a function of the school-average ability levels of students attending the school. Interestingly, the researchers found that individual student achievement had a negative effect on perceived school status; better students perceived the status of their school to be lower than did poorer students. Furthermore, the negative effect of student achievement on school status was more negative when school-average achievement was low. This pattern of results is logical and consistent with the researchers' interpretation of reflected glory effects.

Very high performing students performed better than most of the other students in their school—particularly if school-average achievement was low—so they did not experience as much "reflected glory" as did students not doing as well who could "look up to" the best students. Consistent with Buunk and Ybema's (1997) identification-contrast model, when students perceived themselves as being more able than their classmates, there was little benefit in identifying with them. A more effective strategy, at least in terms of maximizing academic self-concept, was to contrast their relatively superior skills with the weaker skills of their classmates. However, when students perceived their academic skills to be weaker than those of their classmates, it was a more effective strategy to identify with the high-perceived status of the school rather than to contrast their poorer skills with the superior skills of their classmates.

Marsh et al. (2000) also added students' perceived status of their school to models of T3 academic self-concept. The critical features of these models were the juxtaposition of the effects of school-average achievement in models that included school status with those in corresponding models that did not include school status. The effect of perceived school status on T3 academic self-concept was positive (.17) and continued to be positive even after controlling for T2 self-concept. In marked contrast, the effects of school-average achievement on T3 academic self-concept were substantially negative (−.33 and −.31). These negative effects of school-average achievement were substantially more negative than in corresponding models that did not include school status. Thus, for example, in corresponding models that differed only in the inclusion of school status, the negative effect of school-average achievement was −.33 when school status was included but only −.23 when school status was excluded. The negative effect of school-average ability was consistently more negative when school status was included in each of the different models that were considered.

In summary, the juxtaposition of the positive reflected glory assimilation effects of school status and the negative contrast effects of school-average achievement supported a priori predictions. Also consistent with a priori predictions, the inclusion of school status into models of academic self-concept resulted in the negative effects of school-average achievement becoming more negative. These suppression effects were consistent with theoretical predictions that the BFLPE is a net effect of the positive assimilation and negative contrast effects. Hence, when the positive assimilation effects are controlled by the inclusion of school status, the negative effect of school-average achievement becomes a more pure measure of the negative contrast effects and school-average achievement effects become more negative.

Discussion

Hong Kong is an ideal setting for testing the generalizability of the BFLPE and extending this research to more fully evaluate the juxtaposition between negative contrast and positive assimilation effects. The contextual differences are larger—because Hong Kong is one of the most highly achievement segregated high school systems in the world—and so the contrast effects should be more negative than in most Western settings. On the other hand, due to collectivist values in this Chinese setting and the value placed on attending a prestigious high school, the typical social comparison processes underlying the negative BFLPE should be weaker, whereas the reflected glory processes may be stronger. Apparently reflecting these counterbalancing predictions, the size of the negative contrast effects in the Marsh et al. (2000) study are comparable to those found in nationally representative U.S. samples (e.g., Marsh, 1987, 1991).

As predicted, the inclusion of perceived school status into the BFLPE model resulted in a positive effect of school status on academic self-concept (the reflected-glory assimilation effect) and an even more negative effect of school-average achievement on academic self-concept (the social comparison contrast effect). More specifically, (a) there was a strong negative contrast effect of school-average achievement on academic self-concept when both individual and school-average pretest achievement (but not perceived school status) were included in the model; (b) the negative effect of school-average achievement became more negative when school status was included in the model, whereas the effect of school status was positive; and (c) even in models of self-concept change there was evidence of new, additional contrast effects on T3 self-concept beyond the substantial negative effects on T2 self-concept, and these additional negative effects also became more negative with the inclusion of perceived school status.

The results of this study imply that attending a school where school-average achievement is high simultaneously results in a more demanding basis of comparison for students within the school to compare their own accomplishments (the negative contrast effects) and a source of pride for students within the school (the positive reflected glory, assimilation effects). By including a separate measure of perceived school status, Marsh et al. (2000) partialled out some of the reflected glory effects associated with school-average achievement so that school-average achievement became a better (less confounded) basis for inferring social comparison contrast effects, leading to a more negative BFLPE. These results also imply that previous research may have underestimated the size of the negative contrast effects.

More clearly than any previous BFLPE research, the Marsh et al. (2000) results differentiated between negative social comparison contrast effects

and positive reflected glory assimilation effects that comprise the BFLPE. Whereas this finding is consistent with theoretical predictions and is implicit in previous explanations of the BFLPE, previous research has not operationalized the reflected glory effect. A major focus of BFLPE research has been on the substantively important and surprising implications of this research, undermining the assumed advantages of attending academically selective schools. Although obviously supportive of these well-established concerns, the present investigation provides stronger links between BFLPE and broader areas of social comparison theory.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

BFLPE research reviewed in this chapter provides an alternative, contradictory perspective to educational policy on the placement of students in special education settings that is being enacted throughout the world. Remarkably, despite the very different issues, this clash between our research and much existing policy exists at both ends of the achievement continuum in that:

1. In gifted education research and policy, there is an increasing trend toward the provision of highly segregated educational settings—special G&T classes and academically selective schools for very bright students. This policy direction is based in part on a labeling theory perspective, suggesting that bright students will have higher self-concepts and experience other psychological benefits from being educated in the company of other academically gifted students. Yet, our BFLPE and empirical evaluation of the effects of academically selective settings show exactly the opposite effects. Placement of gifted students in academically selective settings results in lower academic self-concepts, not higher academic self-concepts.
2. In recent research and policy for academically disadvantaged students, there is a worldwide inclusion movement to integrate these students into regular, mainstream classroom settings. Although economic rationalist perspectives appear to be the underlying motive for such decisions, the espoused rhetoric is based on a direct application of labeling theory. According to labeling theory, academically disadvantaged children are likely to be stigmatized and suffer lower self-concepts as a consequence of being placed in special classes with other academically disadvantaged students. Yet, theory underpinning our BFLPE and empirical evaluation of the effects of including academically disadvantaged students in regular, mainstream classrooms show exactly the opposite effects. Placement of academically

> disadvantaged children into regular classrooms results in lower academic self-concepts, not higher academic self-concepts. Furthermore, the negative effects of inclusion on peer self-concept, reported by Tracey and Marsh (2000), makes it apparent that academically disadvantaged children in regular classrooms actually feel socially excluded, not included.

Based on our review of previous and new research, we recommend that research evaluating the potential effects of special settings (for academically disadvantaged students and for G&T students) in comparison to regular classroom settings needs to (a) include measures of self-concept and perhaps other psychological variables; (b) utilize multidimensional self-concept instruments with demonstrated reliability and validity to fully explore the impact of different settings on multiple facets of self-concept; (c) gather data on students' academic achievement, self-concepts, and other psychological variables prior to selection into the special programs and at different points of time thereafter; (d) more fully explore teaching and learning activities in the classroom to assess the effects of different classroom environments and types of curriculum on educational outcomes; (e) employ more sophisticated research designs and stronger statistical tools to more critically evaluate conclusions; and (f) use appropriate qualitative research procedures in combination with quantitative research procedures like those emphasized here to more fully explicate the nature of the effects. As noted by Marsh and colleagues (1995), previous research has focused on the definition and identification problems, but more emphasis is needed on identifying students who will benefit most from particular settings. Although special education researchers and policymakers give lip service to the adage that different programs must be tailored to the needs of particular students, there is a paucity of good research supporting this contention and pursuing its implications. More research is needed on how to optimally match special education programs and students with special needs rather than assuming that one type of setting is optimal for all students. In particular, special education programs need to be designed to ensure that curriculum activities include strategies to maintain and enhance students' self-concepts.

Important limitations may be inherent in studies seeking to evaluate the effects of special education settings for students at either end of the achievement continuum. Goldring (1990) noted that "researchers of gifted education programs can rarely assign students randomly to groups" (pp. 314–315). A stronger research design might consist of actually matching G&T students in selective settings with G&T students from other settings (e.g., Marsh et al., 1995). Marsh (1998), however, demonstrated that even this matching design is inherently biased in favor of students in selective

settings under a variety of different matching strategies. He argued that alternative quasi-experimental designs such as the regression-discontinuity design should be considered. Although there seems to have been less critical evaluation of recent trends to include academically disadvantaged students in regular classroom settings, many of these concerns seem relevant here as well. Whereas true random assignment is a desirable design strategy, it is very rare that it can be implemented in special education research. Hence, it is likely that researchers evaluating the effects of placement at both ends of the achievement continuum will continue to struggle with interpretation complications that are inherent in quasi-experimental research designs with nonequivalent groups.

International interest in the BFLPE and its relevance to educational settings throughout the world provide exciting new opportunities to evaluate the cross-national and cross-cultural generalizability of our theory and empirical findings. As illustrated in the German and Hong Kong studies reviewed in this chapter, these opportunities provide a basis for expanding existing research and theory—not just replicating the results of previous "Western" research. The German (Marsh, Koeller, & Baumart, in press) study provided a unique opportunity to evaluate theoretical predictions based on social comparison theory relevant to the reunification of the East and West German school systems after the fall of the Berlin Wall. There were important cultural differences in the two systems prior to the reunification: East German students had only experience mixed-ability classes, whereas West German students had been taught in ability-segregated classes for the previous two years. In the reunification, the ability-segregated model of West Germany was adopted across Germany. Consistent with a priori predictions based on these cultural differences, the BFLPE at the very start of the reunification was stronger in West German schools than in East German schools. By the middle of the first post-reunification school year, the BFLPE was only slightly stronger in West German schools. By the end of this first year, however, there was no difference in the BFLPEs in East and West regions of the reunified Germany. The evolvement of the BFLPE in the East and West German settings provided strong support for the social comparison processes posited to underlie the BFLPE. In the Hong Kong study, Marsh and colleagues (2000) evaluated the generalizability of theory and research based on Western school settings that emphasize an individualist orientation in an Eastern setting with a collectivist orientation. The clear replication of results from Western research provided strong support for the generalizability of the BFLPE to different school settings. In addition, this study provided an important breakthrough in BFLPE research by successfully operationalizing the juxtaposition between assimilation and contrast effects that had been largely implicit in prior BFLPE research.

As demonstrated in the chapter, the juxtaposition between assimilation (reflected glory, labeling) effects and contrast (negative social comparison, BFLPE) effects has critical theoretical and substantive implications. On the one hand, assumed benefits associated with special settings for gifted students and with mainstreaming academically disadvantaged students are based in part on assimilation effects predicted by labeling theory. On the other hand, BFLPE research has demonstrated that contrast effects predicted by social comparison theory predominate. Although these two effects work in the opposite direction, it is important to emphasize that they are not mutually exclusive. Quite the contrary, as emphasized in this chapter, the BFLPE is the net effect of counterbalancing assimilation and contrast effects. Although this theoretical distinction has been emphasized in BFLPE research, it has not been operatationalized and most emphasis has been placed on the negative contrast effects. Given this importance, it is surprising that BFLPE studies and evaluations of assigning extremely bright and very disadvantaged students to special settings have not more fully evaluated these processes. Hence, the inclusion of perceived school status as an indicator of reflected glory, labeling effects is a unique feature of the Marsh et al. (2000) study. In addition to the face validity of the items in their perceived school status scale, there was empirical support for the construct validity of the perceived status responses. In particular, these responses were highly related to school-average achievement—hypothesized as a primary determinant of perceived school status—and contributed positively to the prediction of academic self-concept. Consistent with theoretical predictions, controlling the positive school status component in school-average achievement resulted in a more negative effect of school-average achievement on academic self-concept. More clearly than any previous BFLPE research and, perhaps, any other studies using the imposed social comparison paradigm, the Marsh et al. results unmistakably differentiated between negative social comparison contrast effects and positive reflected glory assimilation effects that comprise the BFLPE. For these reasons, perceived school status or other measures operationalizing labeling effects need to be incorporated into future BFLPE studies.

Diener and Fujita (1997, p. 350) related BFLPE research to the broader social comparison literature. They emphasized that Marsh's BFLPE provided the clearest support for predictions based on social comparison theory predictions in an imposed social comparison paradigm. They emphasized that the frame of reference, based on classmates within the same school, is more clearly defined than in most other research settings. Clearly, the importance of the school setting and the relevance of the social comparisons in school settings are much more ecologically valid than manipulations in the typical social psychology experiment conducted with university students. Indeed, except for opting out altogether, it is difficult

for students to avoid the relevance of achievement as a reference point within a school setting or the social comparisons provided by the academic accomplishments of their classmates. A major focus of BFLPE research has been on the substantively important and surprising implications of this research, undermining the assumed advantages of attending academically selective schools and mainstreaming academically disadvantaged students. Although obviously supportive of these well-established concerns, research reviewed in this chapter also provides stronger links between BFLPE and broader areas of social comparison theory (e.g., Buunk & Ybema, 1997; Diener & Fujita, 1997; Lazarus & Folkman, 1984; McFarland & Buehler, 1995; Taylor & Lobel, 1989; Tessor, 1988; Wills, 1981).

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